Notes

Type Locality of *Papilio indra pergamus* (Lepidoptera: Papilionidae)

Papilio indra pergamus was described by Henry Edwards (1874, Proc. Calif. Acad. Sci. (1)5:423-425) from a single male collected by the coleopterist G. R. Crotch "near Santa Barbara, in May, 1873". The holotype, now in the American Museum of Natural History, bears only the data "Sta Barbara", apparently in Edwards' handwriting.

Other than the holotype, no documented specimens of *Papilio indra pergamus* from Santa Barbara County, California, have been found in searches of all the major museum collections of Lepidoptera in the United States, as well as literature and many personal collections. Tyler (1975, *The swallowtail butterflies of North America*, pp. 18, 62) refers to a "colony in the canyon behind the city of Santa Barbara", but this was based on incorrect information (Tyler, pers. comm.). The subspecies is well known from the mountains of Los Angeles, San Bernardino, Riverside, and San Diego Counties (Emmel and Emmel, 1973, Nat. Hist. Mus. Los Angeles Co. Sci. Ser. 26:11). Since the subspecies is not known from Santa Barbara County (and Ventura County, which falls between Santa Barbara County and the known range), it is likely that the stated type locality is incorrect. It is possible that the subspecies occurs on the entomologically almost unexplored high mountains of Santa Barbara County (e.g., Big Pine Mountain); however, due to inaccessibility (even today), it is very unlikely that Crotch collected there.

The collector of the holotype, G. R. Crotch, travelled throughout southern California from mid March to early May 1873 (Smart and Wager, 1977, J. Soc. Bibliogr. Nat. Hist. 8:244-248). Before and after this, he was in San Francisco, where he was in contact with Henry Edwards. He travelled through San Diego, San Bernardino, and Los Angeles until about 25 April when he sailed to Santa Barbara. He was in Santa Barbara at least 29-30 April (letters from Crotch to Henry Edwards and Herman Hagen in archives of American Museum of Natural History and Museum of Comparative Zoology, respectively). "Early in May" he returned to San Francisco (Edwards, 1874, Proc. Calif. Acad. Sci. (1)5:332-334). Since the holotype bears only Edwards' labels, not Crotch's, it could have been mislabelled by Edwards. Santa Barbara and San Bernardino are easily confused, especially if abbreviated "SB". Edwards incorrectly cited other Crotch data as well. Edwards (1877, Pac. Coast Lepid. 24:5) listed another species collected by Crotch in "July" at Santa Barbara; Crotch was in Oregon and British Columbia in July.

Thus, the type locality of *Papilio indra pergamus* is not "near Santa Barbara", but is farther south, probably mountains near San Bernardino. To avoid further confusion, I fix the type locality of *pergamus* to Devil Canyon, about 11 km NNW of San Bernardino, San Bernardino Mountains, San Bernardino County, California, a well known locality for the subspecies (Emmel, pers. comm.).

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Six Homoeotic *Vanessa atalanta rubria* (Nymphalidae)

Six homoeotic individuals of *Vanessa atalanta rubria* (Fruhstorfer) eclosed from 6-19 July 1982 in the third generation of a culture established 19 February 1982 from larvae collected at Barlow Canyon, Ventury County, California. They represent what is only suspected to be the third inbred generation, since the wild P_1 larvae were probably offspring of unrelated females. The F_1 adults which were paired were most likely sibs because a variant phenotype, informally referred to as "brunnea" in the culture, occurred in 15 out of ca. 150 F_2 sibs. Two pairs of these F_2 "brunnea" adults were mated, producing over 800 ova. The majority of the resulting F_3 were "brunnea" phenotypes, ca. one-fourth were similar to typical *V. a. rubria*, and six of these more typical phenotypes were homoeotic (Figs. 1-6). They are most likely siblings.

Figs. 1-6. Homoeotic *Vanessa atalanta rubria*. Sex and dates of emergence (all 1982): **Fig. 1,** male, 6 July; **Fig. 2,** female, 6 July; **Fig. 3,** male, 9 July; **Fig. 4,** female, 9 July; **Fig. 5,** male, 12 July; **Fig. 6,** female, 19 July.

The homoeotic areas involve the right forewings of five of the specimens and the left forewing of one. Only the upper surface of each wing is affected except in two specimens where a small area of wing and scale deformity has caused an unpigmented spot. Three specimens are males, three are females.

Sibatani (1983, A Compilation of Data on Wing Homoeosis in Lepidoptera. J. Res. Lepid. 22:1-46, 118-125) has recently reviewed all known cases of homoeotic Rhopalocera. He notes a lack of reports of homoeotic specimens from America, so the specimens reported here will correct this situation. Homoeosis has been recorded only once before in this species (Sibatani, *loc. cit.*), but this is for the European subspecies *V. a. atalanta* (L.).

Shapiro (1981(83), Two Homoeotic *Pieris rapae* of Mexican Origin (Pieridae). J. Res. Lepid. 20:242-244) has reported two homoeotic *Pieris rapae* (L.) that are most likely sibs, and Gardner (1963, Genetic and Environmental Variation in *Pieris brassicae*. J. Res. Lepid.; 2:127-136) reports rearing three homoeotic specimens from one brood of over 300 *Pieris brassicae* (L.). The addition of the six homoeotic *V. a. rubria* reported here would seem to support the genetic predisposition presumed by Shapiro (*loc. cit.*) to occur in some inbred cultures.

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